



**ENGINEERING OPERATIONS COMMITTEE
MEETING MINUTES
September 1, 1994, 9:00 A.M.
EXECUTIVE CONFERENCE ROOM**

Present:	P. Miller	C. J. Arnold	R. Maki
	G. D. Taylor	C. Roberts	J. K. Erickson - FHWA
	L. A. Kinney	L. R. Brown	J. Reincke
	G. D. Dobie	J. D. O'Doherty	
Guests:	W. C. Turner	E. Winkler	J. Kelsch

OLD BUSINESS

1. Minutes of the August 4, 1994, meeting were approved in accordance with the revisions regarding the Action statement for New Business Item No. 1, "Recommendation to Suspend the Use of Geogrids, Geofabrics and Membrane Materials for Pavement Rehabilitation or Maintenance."

ACTION, As Written: EOC approved the BAC recommendation as presented. As a follow-up to this action, R. Welke will arrange a summit meeting to discuss this issue with the construction industry during the month of September, 1994.

ACTION, Revised: EOC approved the BAC recommendation as presented.

2. **Proposed Widening of US-131 Around It's Interchange With the Proposed Southbelt (M-6) Freeway, South of the Grand Rapids Metropolitan Area in Kent County - P. Wisney**

At the July 7, 1994, EOC meeting several alternatives were presented for the proposed widening on US-131. A discussion of the prepared alternatives lead to several critical questions requiring clarification as part of the proposed treatment of the subject roadway. A summary of the project, alternatives considered and action taken is presented below.

The Southbelt/US-131 interchange is presently being designed with an anticipated completion date of January 1997. This interchange design is part of a larger project to design and build approximately 25 miles of rural freeway in the southern part of the Grand Rapids metropolitan area. This new freeway facility, called the Southbelt (M-6) extends from I-96 southeast of the city of Kentwood westerly to I-196 west of the city of Wyoming, with a major interchange with US-131, in Byron Township. To effectively handle the increase in traffic caused by natural growth and the new interchange, US-131 will have to be widened in the interchange area. The question now is whether we (the department) want to widen the roadway by adding a third lane in the median or on the outside.

US-131, covering a distance of approximately 17.7 miles, from 7.0 miles south of the Allegan County line to M-11 (28th Street) in the city of Wyoming, is a limited access freeway with a 36-foot median between edges of metal, a distance of approximately 17.7 miles. The freeway fits within 200 feet of right-of-

way. Capacity improvements were made in the Grand Rapids metropolitan area from 44th Street north by adding a third lane in the median in both directions. This reduced the width of the median to 12 feet that was paved and divided into two four-foot shoulders separated by a median concrete barrier. This design was adopted to reduce right-of-way takes and to control the amount spent on construction. South of 44th Street, the cross-section returns to two lanes each way separated by the 36-foot median.

The Southbelt/US-131 interchange will be located between 60th and 68th Streets near Cutlerville in Byron Township, just north of the existing US-131 interchange with 68th Street, approximately one mile south of 54th Street and 2.1 miles south of the interchange at 44th Street. The interchange at 68th Street is tightly located between a McDonald's restaurant on the northeast quadrant, a gas station on the southeast quadrant, and an established residential neighborhood in the southwest quadrant. Currently, preliminary site preparation and foundation work are being done for the erection of a K-Mart store in the northwest quadrant. The new design proposes to maintain the 68th Street interchange with minimal additional right-of-way takes and develops the new freeway-to-freeway interchange with the help of Collector-Distributor roads. A design exception sought by the department to minimize right-of-way impacts, for building the bridge at 68th Street with a 14-foot, 6-inch underclearance instead of 16-foot, 3-inch has been granted by the Federal Highway Administration.

The M-6/US-131 interchange was being designed keeping the existing cross-section on US-131, i.e. two lanes and a median width of 36 feet between edge of metal. Studies conducted of existing/projected traffic volumes and over/under treatments lead to the following:

- US-131 must be widened to three lanes in each direction for approximately two miles within the interchange area; and
- US-131 will cross over M-6, instead of the originally proposed M-6 over US-131.

The three options developed for consideration are presented below:

Alternate A - Adding the third lane in the median: This alternative, while facilitating the construction of the Southbelt/US-131 interchange, would result in an estimated right-of-way cost of \$20,000,000 for the entire interchange and would leave intact the physical structures of the McDonald's restaurant, the gas station and enough of the K-Mart property to make it operable. This section of US-131 could easily tie into the road portion north of 44th Street, and would not necessitate the rebuilding of structures other than those impacted by the reconstruction of US-131 and the placement of the interchange. As traffic volumes increase along the corridor, the segment of US-131 south into Allegan County could be widened and easily tied to the northern segment for a uniform section on US-131 without forcing the reconstruction of the structures and interchanges along these segments. This design requires the reconstruction of 1900m of northbound and 1300m of southbound US-131. Existing bridges along

US-131 that would have to be widened as part of this project include the US-131 structures over Buck Creek and the US-131 structures over Conrail. Designs for proposed structures US-131 over M-6 and US-131 over Ramp E could easily be modified to carry a third lane on the inside.

Under this proposal the design will be substandard according to the AASHTO Guidelines which recommend a full 12-foot emergency shoulder on six-lane freeway or more. In climates such as that of Michigan, a 12-foot should is preferable also for the storage and removal of snow. A request for a Design Exception from the Federal Highway Administration to implement this type of design is required.

Alternate C - Widening US-131 on the outside: Alternate C will conform with the AASHTO Guidelines by providing adequate width in the median for emergency and snow storage. It will also contribute to better operations on a complex freeway-to-freeway interchange with high traffic volumes on both facilities. This new cross-section on US-131, if implemented, would be approximately two miles long, sufficient for developing the interchange and making it work. Bridges to be impacted include 68th Street over US-131 and Ramp G over US-131, in addition to the structures affected by Alternate A.

The US-131 and M-6 interchange is located approximately one mile south of the 54th Street interchange and 2.1 miles south of 44th Street where US-131 becomes a six-lane freeway with four-foot shoulders. This design will require the reconstruction of the southern ramps at the 54th Street interchange to provide for a transition section from widening on the outside to widening in the median.

The McDonald's restaurant would have to be purchased and substantial damage would be done to the gas station property forcing us to acquire the parcel in it's entirety.

Alternate B - Widening on the outside with a concrete barrier: A safety analysis report from the Safety Program Unit of the Traffic and Safety Division, recommends that any segment of highway with median width of less than (*) feet be rebuilt to the 26-foot minimum median width with concrete barrier.

Alternative B proposes to narrow the existing 36-foot median to 26 feet divided into two 12-foot shoulders by a median concrete barrier. This cross-section presents the advantage of a standard section on a six-lane freeway while decreasing the impacts and costs of right-of-way and increase the safety on the freeway. Bridges to be impacted are the same as those affected by Alternative C (US-131 over Ramp E, US-131 over M-6, US-131 over Buck Creek, US-131 over Conrail, Ramp G over US-131, and 68th Street over US-131). Bridge construction costs for Alternative B are higher than for Alternative C because, due to widening on both sides, work on US-131 structures over Buck Creek and Conrail become reconstruction. Impact on the McDonald's restaurant and the gas station is still considered damaging enough to force us to acquire these properties in their entirety.

ACTION: The EOC approved "Modified Alternate C" with a median width of 16 feet. Additional issues that must be addressed in preparation for consideration by the Highway Steering Committee (HSC) includes:

1. Pavement transitional impact and treatment with the 54th Street interchange.
2. Design concept and project cost.

A final project report must be submitted for EOC consideration prior to a formal submittal to HSC.

NEW BUSINESS

1. **Request for Line Item for Electrical Work - C. Arnold**

Routine maintenance of the MDOT freeway lighting system does not correct all the known problems associated with our existing system. With the addition of new installation procedures, the age of our present system, and the absence of a district supported program to upgrade the system, additional monies are needed to continually improve our freeway lighting and transportation facilities for the safety of the motoring public.

ACTION: The EOC established and charged a committee, including representatives from Design, Maintenance and Traffic and Safety Divisions, chaired by R. Maki, to address the following:

1. Review existing lighting practices and determine if the safety and maintenance management systems presently under development address lighting needs, if not, what recommendations are appropriate to address the lighting issue.
2. Determine the need for an annual or bi-annual inspection/review procedure.
3. Advise EOC, as appropriate, of any further issues that may be of concern.

2. **Work Plan No. 142, "Cost Comparison of Warranty and Non-Warranty Bridge Paint Projects," Research Project 94 TI-1717 - J. Reincke**

In the last few years MDOT has been using the three-coat system to protect the bridges in the state. The majority of the newly painted bridges have some type of problem in the first two years that are not noticeable at the time of inspection. These bridges need some repair by Maintenance forces after two years, which increased the total cost to the department for each project.

The objective of this project is to compare the bid price of several warranty projects to the bid price plus two-year maintenance costs for projects without a warranty. This comparison will provide information to validate the benefits associated with warranty projects.

ACTION: The EOC approved the proposed (experimental) project with the stipulation that in addition to the stated cost criteria, consideration of the associated cost/benefits as related to other studies that have been completed are included and coordinated with Maintenance Division.

3. Resolution of Claims and Makeup of Central Office Review Panel - R. Welke

This item was presented as information and requires no further action.

4. Unsolicited Research Proposals - J. Reincke

This item was discussed for clarification as well as the confirmation that the existing policy address this issue.

ACTION: None required.

5. BIOACT - G. Dobie

This item was presented as information.

ACTION: M&T will contact and address all issues with MDOT's environmental liaison.

(Signed copy on file at M&T)

Calvin Roberts, Secretary
Engineering Operations Committee

cc EOC Members
District Engineers

G. H. Grove	G. J. McCarthy	L. K. Heinig	T. Adams
E. D. Winkler	D. L. Coleman	W. C. Turner	D. L. Smiley
L. W. Martin	H. J. Nyquist	R. W. Muller	R. E. Nordlund
L. E. DeFrain	G. L. Mitchell	J. E. Norton	C. W. Whiteside
I. B. Patel	C. G. Cantrell	G. H. Gallup	A. G. Ostensen
G. J. Bukoski	R. D. Till	J. Becsey	